



**Australian Government**  

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**Chief Scientist**

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**Monash University**

**Faculty of Science Graduation Address**

***No Limits***

**Tuesday 4 October 2022**

**Clayton, Victoria**

Thank you so much for this honour and the opportunity to be here today.

I'm just off a plane from Tokyo, after a week at meetings in Korea and Japan. We flew overnight, and I've come here virtually straight here from the airport this morning, so forgive me if I'm looking a bit ruffled around the edges.

And if you're pursuing a career in science, be careful what you wish for!

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I'd like to start by acknowledging the Bunurong people of the Kulin Nations, the traditional custodians of the land on which we are meeting today.

I acknowledge the elders who are caring for those lands. I pay my respects to the old ones who have come before and the young ones who will follow.

I'd also like to acknowledge Dr Clark, Professor Gardner, Professor Nash, members of the faculty and the new graduates.

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Thank you again for the invitation to speak and for the honour of a doctorate.

This cements my longstanding association with Monash University.

I know Monash as one of the top universities in the world, one of the biggest in the world, and also as a university that has always worked hard for its position.

When I worked at the CSIRO, we were involved in strong collaborations with your university on stem cell science, nanotechnology and materials science, and at one stage I was on the Monash physics advisory committee.

Monash was always marked out for me by generosity. You were always willing to stump up the money for important initiatives, like the synchrotron and the Melbourne Centre for Nanofabrication.

I've also watched the transformation of the campus. Monash started from scratch, without the grand history or the beautiful buildings of other campuses - and had to create its own history. You had to fight to get where you are and I admire you all the more for it.

To the graduates today, congratulations. The education system is a long haul. It's never easy and never without effort.

For some, it will have been a straightforward path, with a logic and a flow to your movement from one year to the next. For others, I know it will have been a more interrupted path. You may have had some years out of education, or launched into one course and then changed tack. Some of you may've had times where it felt like you might never graduate with a university degree.

And yet here you are. Here all of you are. Graduates. Each of you with that qualification you will always be proud of, and deservedly so.

To be honest, I remember very little about my own graduation ceremonies, certainly nothing the speakers had to say!

But I do remember the pride I felt when I graduated with a Bachelor of Science at Macquarie. I was part of the first cohort to ever to receive that degree. Before then, all Macquarie graduates received a Bachelor of Arts, even when your major was science.

My PhD was also from Macquarie, and that was another source of pride for me. I have dyslexia, which had an impact on my early school years – and also on people's perceptions of my career path. I wasn't considered the most academic of my six brothers and sisters, and would never have expected to get as far as a PhD.

Nor would I have ever expected to become Australia's Chief Scientist. But there it is! That's the way the chips fell ... and if my journey can inspire any of you not to set limits around yourself, or expectations that you have a certain allotted space in the hierarchies and structures of our society and economy, then that's a good outcome from my perspective.

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I know you will be feeling pressure to make decisions about your future. You have probably felt that pressure for at least five years or more, since you had to choose subjects for the final year of school. These decisions always seem so important at the time, but as you look back, they fade in importance.

Now, you will be deciding on your next step – into the workforce or further study – or perhaps you plan to tune out for a bit. This decision might also feel overwhelmingly consequential. So much so that you get stuck, not knowing which way to jump. Of course, it's important. You want to have an exciting career, and that does involve strategic decisions. It's never simple or obvious.

But I do think that sometimes we put too much weight on transition points in our lives, and build them up so they feel like a fork in the road where there is no way back. My suggestion is that when you're trying to decide between two compelling options, do both. Bad advice in love; great advice in your career.

My second suggestion is choose for the footprint you will leave, your imprint. Which of the options ahead are most likely to leave an imprint, big or small, that you will be proud of.

I have spoken at many graduation ceremonies, I think at perhaps at 20 universities.

One of the things I used to tell graduates is find ways to operate within the system – learn the system and become fluent in the language of your workplace. I guess this message came from my experiences as a female in a pretty male workplace, where the best way to navigate through seemed to be to watch how the men did it and then learn the moves.

My attitude has changed. I no longer think we should be shaving pieces off ourselves to fit the system. Like trying to fit a square peg into a round hole. The world has changed. Now, as Australia's Chief Scientist, I talk much more often about the need for the system to accommodate all shapes of human.

Our workplaces need much more diversity, not just gender diversity, but also more involvement of people who are neuro-diverse, people at each end of the age spectrum – older and younger Australians – and people from different socioeconomic groups.

For me, it's about making the most of the full human potential – not only because it's fair, and the right thing to do, but because we make better decisions when we listen to a variety of viewpoints.

And we make better machines and better devices when we have input from the full range of people who will use them. Who better to design a robotic limb than someone who needs one? Do any of us really want to travel in a self-driving car programmed by people from a single narrow sector of our society? I'll leave that question with you. It's worth pondering.

These issues relating to diversity are for everyone in our community, from government to industry to individual workplaces. But they are also questions for us as individuals.

I know it is increasingly difficult to even hear a variety of viewpoints – let alone to air them, and have the debate. We are hardwired to hear viewpoints that reinforce our beliefs and our choices, and reject those that don't. We are comforted by this self-reinforcing cycle. And it is fed by online algorithms.

But it is not useful for cohesion. And nor is it useful for the process of discovery – which is one of the most satisfying and majestic things about the world of science.

So I urge you to keep being curious. Be open to the possibility you might be wrong. And be open to the mad and maddening variety that other people bring to the picnic.

I know in some ways it must seem as though the world has gone to pot. As though we are operating in a state of crisis and dysfunction. Perhaps I am a hopeless optimist. But I actually believe this moment has the makings of a momentous shift towards positive things.

The reason I say this is because the world has heard the message of sustainability. Our political leaders and our biggest companies in Australia are on this path. Our international partners are in lock-step.

We are embarking on a different kind of future that has sustainability in the broad sense at its centre. This is a great opportunity for you.

In Australia, we're on the cusp of an explosion of jobs in sectors such as biotechnology, robotics and artificial intelligence, space, quantum technologies, and in renewable technologies such as green hydrogen, green steel and the electrification of transport.

All of these new industries are coming straight at us, and they are really exciting sectors to work in. They're crying out for you – not only those of you here today with science degrees, or degrees in IT or engineering, but also for graduates with skills in business, in teaching, art and design, communications, ethics and law. Fundamentally, it is the humanities that keep us honest and make us wise.

So good luck. I encourage you to be open to the cacophony of perspectives and to the world of opportunities. And choose all of the above, if you can.